

We claim:

1. A pest deterrent device comprising:
a sensor capable of detecting a pest;
a trigger circuit electrically coupled to the sensor, the trigger circuit providing a triggering signal having a first polarity in response to a triggering event, the trigger circuit activating a load during the triggering signal, the triggering signal being coupled to a summing junction through a capacitor as positive feedback;
a negative feedback path electrically coupling an inverse triggering signal to the summing junction to discharge the capacitor and turn off the triggering signal and the load after a triggering period, the trigger circuit providing a lockout signal following the triggering signal, the lockout signal being coupled to the summing junction through the capacitor as positive feedback and an inverse lockout signal being coupled to the summing junction as negative feedback to lock out the load until the lockout signal is turned off after a lockout period.
2. The pest deterrent device of claim 1 wherein the sensor produces both a positive pulse and a negative pulse upon detection of a pest, only one of the positive pulse or the negative pulse triggering the load.
3. The pest deterrent device of claim 1 wherein the trigger circuit includes a first amplifier providing a first output and a second amplifier providing a second output, the first output being the inverse triggering signal and being coupled to an inverting input of the second amplifier, the second output being the triggering signal.
4. The pest deterrent device of claim 1 wherein the negative feedback path includes a resistor in parallel with a diode.
5. The pest deterrent device of claim 4 wherein the negative feedback path further includes a second resistor in series with the diode and in parallel with the resistor.

6. A pest deterrent device comprising:

a sensor capable of detecting a pest;

a trigger circuit electrically coupled to the sensor, the trigger circuit providing a triggering signal having a first polarity in response to a triggering event, the trigger circuit activating a load during the triggering signal, the triggering signal being coupled from an output of an inverting amplifier to a summing junction of a second inverting amplifier through a capacitor as positive feedback;

a negative feedback path electrically coupling an inverse triggering signal from a second output of the second inverting amplifier to the summing junction to discharge the capacitor and turn off the triggering signal and the load, the trigger circuit providing a lockout signal following the triggering signal, the lockout signal being coupled from the output of the first inverting amplifier to the summing junction through the capacitor as positive feedback and an inverse lockout signal being coupled from the second output of the second inverting amplifier to the summing junction as negative feedback to lock out the load until the lockout signal is turned off.

7. A method of locking out a detector circuit, the method comprising:

providing a detection signal from the detector circuit to a saturation amplifier;

producing a first saturated output signal from the saturation amplifier, the first saturated output signal having a first electrical polarity;

electrically coupling the first saturated output signal to an inverting input of a second amplifier;

inverting the first saturated output signal to produce a triggering signal having a second electrical polarity and being configured to activate a load;

electrically coupling the triggering signal through a capacitor to an inverting summing junction of the saturation amplifier;

electrically coupling the first saturated output signal to the inverting summing junction of the saturation amplifier;

discharging the inverting summing junction to turn off the triggering signal and the load after a trigger period;

producing a second saturated output signal from the saturation amplifier, the second saturated output signal having the second electrical polarity;

inverting the second saturated output signal to produce a lockout signal having the first electrical polarity and being configured to de-activate the load;

electrically coupling the lockout signal through the capacitor to the inverting summing junction of the saturation amplifier;

electrically coupling the second saturated output signal to the inverting summing junction of the saturation amplifier;

discharging the inverting summing junction to turn off the lockout signal after a lockout period.

8. The method of claim 7 wherein the lockout period is essentially equal to the trigger period.